TEXTILE READER'S GUIDE

Classification of Contents

Fibers	1132
Yarn Production	1134
Fabric Production	1146
Standard Finishing	1154
Dyeing and Printing	1154
Special Finishing	1157
Testing and Measurement	1158
Textile Mills	1159
Chemistry and Physics	1164
Textile Education and Research	1168
Index to Authors	32

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Abstracts

[1132]

FIBERS A

Natural Fibers A 1

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Part III—The effect of moisture in processed materials

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Article discusses the influence of moisture on the spinning properties and characteristics of jute. Information on the experiments conducted on the effect of moisture and the results of these tests are included.

Cotton defoliation and fiber maturity

Mary Anna Grimes. *Textile Research Journal 22,* 640 (October, 1952).

For the four states included in this study of fiber maturity, the most mature fibers were obtained when defoliants were applied 35 and 41 days after peak of bloom. For eight of the twelve series from the four states, 41 days gave better results than earlier dates; for four series, 35 gave an insignificantly higher percentage of mature fibers than 41 days.

From these results it is concluded that defoliantns should not be applied earlier than 35 days, and preferably 41 days, after the peak of bloom in order to get the highest percentage of mature fibers.

Sees Re-emergence of Silk

Anon. *America's Textile Reporter 66,* 14 (November 20, 1952).

Look for silk to re-emerge as a heavy volume fiber by boosting the high fashion potential of some of the modern synthetics, predicted Robert M. Schwarzenbach, Pres. of Schwarzenbach Huber Co., in announcing that his mills are now turning out three different fabric blends of silk with du Pont's magic fiber Orlon.

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Anon. *America's Textile Reporter 66,* 19, 21, 29 (November 20, 1952).

Once more the government cotton crop estimate announced last week caused considerable

comment and resentment among many in the trade as a result of the considerable fluctuation that had been noted in these reports. These fluctuating crop estimates and false export estimates are causing market losses and slowing up of new business.

Artificial Fibers A 2

A Swiss polymer fiber

Anon. *Skinner's Silk & Rayon Record 26,* 1356 (November, 1952).

See front section.

Employs simple stain technique for indentification of new fibers

Anon. *America's Textile Reporter 66,* 77-78 (November 20, 1952).

A simple microscopic-solvent technique for the identification of fibers by the average technician without benefit of laboratory equipment was one of two methods presented recently at the meeting in New York of the American Association of Textile Technologists. The method presented was described as a simple staining of the fibers followed by microscopic examination and observation of their solvent properties.

Plastic deformation of regenerated celluloise fibers I

Saburo Okajima and Yasuji Kobayashi. *Bull. Chem. Soc. Japan 24,* 85-90 (June, 1951) ;*in England.*

A dichroic study of the deformation of freshly spun fibers was made. Dichroism can reasonably show the inner structure of stretched fibers especially if the volume change of the fibers is taken into consideration.

Plastic deformation of regenerated cellulose fibers II

Saburo Okajima and Shigeru Hayama. *Bull. Chemical Soc. Japan 24,* 90-3 (June, 1951) ; *in English.*

The deformation by stretching of freshly prepared fibers was studied from the standpoint of refractive index. The volume change of the fibers was taken into consideration.

Regenerated protein fibers from keratin—II

Alexander, P. *Textile Industries and Fibres 8,* 286 (September, 1952).

Article is number two in a series which deals with the modification of keratin so that it can be dissolved in alkali or powerful hydrogen bond

breaking solvents. After dissolving, the prepared protein material can be spun into a coagulating bath which forms the fibers. As these fibers are soluble in water, they must be further treated with formaldehyde. Article gives the processes and reagents used in the experiments and also suggests some possible commercial applications.

YARN PRODUCTION B

Carding and Combing B 2

A new approach to opening, blending, and carding man-made fibers

Staff. *Textile Industries 116,* 120 (December, 1952).

Prototypes of machines developed specifically for opening, blending, and carding man-made fibers up to and including staples 4½ inches long and deniers from 1½ up were described at the 37th annual conference of the Textile Institute held at Edinburgh last June in a paper by W. A. Hunter, director of T.M.M. (Research) Ltd.

Excellent webs have been obtained at a production of 22 lb/hr on a 40 wide machine, "waste losses being down to 0.14 per cent,"

Platt Bros. (Sales) Limited, Oldham, England, state in one of their recent bulletins that this equipment has been tested in their laboratories with very satisfactory results and is now undergoing tests in a Lancashire mill under actual production conditions. The machinery manufacturer estimates that it will be the middle of 1953 before quotations on this machinery will be available.

Benefits of neps study

America's Textile Reporter 66, 19 (November 13, 1952).

Textile mills in the South are deriving direct benefits from the three-year research study on causes and reduction of neps carried on at the School of Textiles, N. C. State College. Although results of the study have been public only six months, ten mills having a total of about 350,000 spindles have reported increases in carding production averaging 55 percent, reductions in the number of neps produced in manufacturing, and in some cases, better yarn quality.

Control rolls for cards eliminate defects in sliver due to plucking

Staff. *Textile Industries 116,* 81 (December, 1952).

See front section.

Control Rolls mimimuze plucking at feed roll-lickerin area

Anon. *Textile World 102,* 152 (December, 1952).

New control roll, for use singly with mote knives or for use in tandem without mote knives, has been developed by Saco-Lowell for either roller-top or revolving flat cards. Application of the new rolls practically eliminates the defects in sliver caused by plucking by the lickerin. A discussion of their application and illustrations of installation on both cotton and illustrations on both cotton and rayon work are given in article.

How gill reducers are being used by mills

Walter P. Rutley, Holdsworth Gill Screw Co. *Textile World 102,* 111, 212, 214 (December, 1952).

Today, gill reducers are, in most cases, replacing the heavy, open-drawing machines used in the Bradford system and, in some cases, the heavy gills and coarse porcupine machines of the French system. There are usually three gills, a reducer, and a rover employed in the new system of spinning worsted yarns. For coarser counts, only a rover may be necessary. Article tells how processing costs may be lowered and describes typical layouts for nylon and viscose-wool blends.

How to do a better job in carding 3-denier nylon

J. A. Newnam, Textile Fibers Dept, DuPont Co. *Textile World 102,* 114-115, 94, 196, 198 (December, 1952).

Article includes a set of new mill-tested speeds and settings for carding 3-denier nylon which can (1) increase production up to 100%, (2) improve sliver evenness, (3) lengthen the stripping cycle to 80 hours. A graphical illustration of the various card settings is given, and the following points are brought out in the discussion: the setting of the feed plate is critical, higher lickerin speeds are possible because of nylon's toughness, the speed of the flats affects both sliver uniformity and amount of strips, because of the crimp in the fibers, a fancy roll is necessary and tension on the web must be reduced, and with the settings given, card production reached 23 lb. per hour.

Method and means for varying the count of roving in carding machines

Hubert G. Duesberg and Cecil A. Potter (to Duesberg-Basson of America, Inc.); U. S. P. 2,610,361 (September 16, 1952).

Means for varying the count of roving pro-

duced by a carding machine in which the machine comprises the elements of a cylinder, doffer and tape condenser in series, the roving varying means comprising a principal drive for the cylinder, doffer and tape condenser which principal drive maintains a constant relative speed between all of the elements and a variable speed drive mechanism interposed between the principal drive and the doffer and tape condenser whereby upon adjustment of the variable speed drive mechanism the relative speeds of the doffer and tape condenser may be maintained with respect to each other but varied simultaneously with respect to the cylinder.

Mill evaluations of the State College nep control program

Harry Defore. *Textile Industries 116,* 133-134 (December, 1952).

See front section

Drafting and Roving B 3

Device for parallelizing fibers in sliver

Benjamin B. Cravens (to Whitin Machine Works); U. S. P. 2,611,155 (September 23, 1952).

A condenser device for sliver or roving comprising a support and two oppositely convex curved bending members arranged transversely of the sliver or roving and bending it in opposite transverse directions as the sliver or roving passes under the curved surfaces of the bending members, and a notched compacting member forming the exit end of the condenser device for condensing the sliver or roving following its passage across the curved bending members.

Draft proportionment for coarse, short-staple cotton on long draft roving systems

James R. Corley and Jack Simpson. *Textile Industries 116,* 125 (December, 1952).

New draft guides for manufacturing roving from a representative shortstaple, coarse-fibered variety of cotton with three long-draft systems are set forth in this article.

Uniformity tests are described which demonstrate the improvement of roving and yarn evenness achieved from use of the new-as contrasted to the former draft proportions.

Roller neck bearing for textile drafting machines

Elvin B. Robinson and Jack C. Costner (to Ideal Industries, Inc.); U. S. P. 2,610,363 (September 16, 1952).

In a textile machine in which rolls are employ-

ed for drafting textile fibers, the machine having axially alined sections of bottom rolls and also having top rolls and also having spaced bearing blocks provided with bearing cavities at least one tubular bearing housing having flattened sides along its medial portion disposed in the cavity cavity of each of the bearing blocks and engaging the side walls of the bearing cavities to prevent rotation of the tubular bearing housing, a shaft connecting adjacent sections of the bottom rolls and each shaft being mounted in a separate one of the tubular bearing housings, each tubular bearing housing having a restricted bore intermediate its ends providing a shoulder at each end thereof and a plurality of circularly arranged rollers on each side of the restricted bore and surrounding the shaft and in which the shaft may rotate, a pair of roller bearing housings encircling the rollers and being pressed against the shoulders the opposed outer ends of the tubular bearing housing having a pair of spaced washers secured therein and the shaft having a washer secured thereon and occupying the space between the first-named washers.

Tape-to-tape uniformity for wool roving

Staff. *Textile Industries 116,* 106 (December, 1952).

The most significant of the results from a study of woolen carding has been the development of the Bigelow Card Compensator, a low-cost attachment that improves uniformity of sliver across cards equipped with the broadband feed.

This mechanism has been in operation for three years at Bigelow-Sanford's mills in Thompsonville, Conn., and Amsterdam, N. Y., and has been used experimentally for two years at the Albany Felt Company, Albany, N. Y.

Accumulative tests have shown that it reduces roving weight varations by 50 per cent.

The cost, including installation, is insignificant in comparison with the original investment of the card.

The Bigelow Card Compensator is said to be the first development for cards with broadband feed that establishes a control for transverse variations in roving weights. It can be adjusted to meet the requirements of any carding operation.

Spinning B 4

Apparatus for removing waste yarn from bobbins

William V. Henry (American Enka Corp.); U. S. P. 2,617,172 (November 11, 1952).

Apparatus for removing waste yarn from bobbins comprises means for propelling the bobbins to a cutting zone with means for elevating one end of each bobbin to contact a stationary cutter.

Apparatus for spinning, twisting, and winding yarn

John J. Gammon and Charles P. Powell (to Cluett, Peabody & Co., Inc.); U. S. P. 2,611,229 (September 23, 1952).

In a winding and twisting apparatus, a tubular bobbin carrier, a rotatable element passing through the carrier and on which the carrier is rotatably mounted, the element having an axial passage extending downwardly from its upper end and a radially extending passage opening into the lower end of the axially extending passage, a member rotatably mounted on the upper end of the element above the carrier and having a depending skirt telescoping over and spaced from the carrier, a reversing cam screw rotatably carried by the skirt and having its axis of rotation generally lengthwise of but at one side of the carrier, a cam follower slidingly guided along the screw by the skirt and having camming engagement with the screw, a thread guide carried by the follower, and guiding to a bobbin on the carrier to be wound thereon, a thread descending past the skirt, inwardly along the radial passage, upwardly through the axial passage and then to the thread guide, means for holding the carrier from rotation with the element, and a driving connection from the element to the screw by which relative movement between the member and element causes rotation of the cam screw.

Application of a theory of the spinning balloon I

Margaret Hannah. *J. Textile Inst. 43,* T519-535 (October, 1952).

The results of a mathematical investigation are applied to show how the shape and tension of the balloon in normal cap spinning depend on air drag, cap size, bobbin size, and balloon length. One set of master curves is given which includes the effects of all these variables. Licking round the cap is discussed, and it is shown how the behavior of the balloon depends on the friction between the yarn and the cap surface, and on the shape of the cap. A solution for the ordinary parallel cap is fully worked out. All these results are then shown to check very closely with previous experiments.

Ball bearing textile spindle

Lester E. Keene (to Whitin Machine Works)

U. S. P. 2,611,231 (September 23, 1952).

A textile spindle comprising a base member adapted to be secured to the frame of a spinning or twisting machine, a central post carried by the base member and presenting an upright cylindrical stem portion, a whorl, a blade fast with the whorl, the whorl being recessed axially ot its underside with a depending annular belt-engaging skirt portion which extends down over and encompasses the stem, the post and its stem being in axial alignment with the blade and constituting a normally stationary support for the whorl and its blade during their rotation by a belt, the interior of the recess presenting an inner annular shoulder, a pair of self-sealed lubricated ball bearing units spaced widely apart on the stem and housed entirely within the axial recess of the whorl skirt portion, the ball bearing units supporting the whorl and its blade for free rotation upon the stem, each of the ball bearing units having its inner and outer race ring members secured by a light press fit to the whorl and the stem respectively, the upper ball bearing unit having the top end face of its outer race ring member in firm abutting engagement against the annular shoulder within the whorl recess, a spacer on the stem interposed between and in engagement with the inner race ring members of both ball bearing units, and a resilient metal ring member beneath and bearing against the bottom end face of the outer race ring member of the lower ball bearing unit securing the last-named race ring member fast with the whorl.

Cotton fly

Dent Mangum, Jr. *Textile Industries 116,* (December, 1952).

The report is concerned with (1) the occurrence and causes of fly, and (2) available means for controlling fly in cotton mills. A preliminary investigation undertaken to determine whether or not further research was needed or whether present methods of controlling fly provide a satisfactory solution to the problem.

Magnetic tension device features minimum yarn abrasion

Staff. *Textile Industries 116,* 83 (December, 1952).

Tension on yarn now may be controlled by means of a new magnetic tension device which uses magnetic drag rather than friction. Minimum abrasion of the yarn is the chief advantage claimed for the new device. Operational speeds up to 700 yards per minute are possible. Tension control ranges from 3.5 to 10.5 grams. Mfr: General Electric.

Rotary roll clearer for draft frames

Whitworth F. Bird (to Collins & Aikman Corporation); U. S. P. 2,610,362 (September 16, 1952).

In a draft frame, feeding means, delivery means including a front delivery bottom roll, a driving and supporting shaft for the bottom roll, a rotatable clearer roll, a supporting shaft for the clearer roll, guide means on the frame for receiving an end of the clearer roll supporting shaft and to aid in positioning the clearer roll in contact with the bottom delivery roll, locking means for holding the clearer roll shaft within the guide means, and means, including a closed loop, for connecting the bottom driving and supporting shaft and the rotatable clearer roll supporting shaft in driving relationship and for holding the clearer roll in contact with the bottom roll.

Spinning frame

Erle F. Saunders and Donald Drysdale. U. S. P. 2,611,230 (September 23, 1952).

A spinning frame, comprising, a plurality of spindles on each of which yarn is spun, a set of drawing rolls from which the strand is fed to the spindles, a creel and a plurality of roving bobbins on the creel from which the roving is fed to the drawing rolls and collecting means for scavenger waste, means for driving the drawing rolls and common driving means for a plurality of spindle responsive to ends which are not intact, separate interrupting means for each spindle for stopping the roving being fed to that spindle at a position prior to the entry of the roving into the drawing rolls, each of the detecting means including a pivoted support, means for pivoting the support in reciprocating movements, a sensing element pivoted to the support and having an extending portion for engagement with the strand of fibers being spun and a balancing portion extending in an opposite direction from the pivotal point, the balancing portion of the sensing element being adapted to over-balance portion tends to take a predetermined path in the absence of pressure on the extending portion, a switch element having a switch member projecting within the predetermined path, the reciprocating movements of the support being adapted to cause movement of the sensing element into the normal path of the strand of fibers being spun whereby the extending portion is deflected when the strand is intact thereby causing the balancing portion to clear

the switch member, the switch member being connected to the interrupting means for that spindle.

Spinning frame

Jas. E. Sumner, U. S. P. 2,618,115 (November 18, 1952).

In a spinning frame having a vertically acting ring rail, a stop motion device comprises a pivotally mounted arm with a magnet and a mercury bulb switch on opposite ends; when the bobbin is full, the magnet contacts the rail and upon its downward traverse, the motor circuit is broken.

Spinning ring assembly

George F. Albrecht, U. S. P. 2,618,116 (November 18, 1952).

A spinning ring assembly comprises a traveler guiding annulus of oil absorbent material and a supporting annulus of oil-impervious material wherein the supporting annulus has an oil reservoir and an annular channel holding a wick which feeds from the oil reservoir.

Spinning, twisting, and like apparatus

Ralph Ragan, U. S. P. 2,610,461 (September 16, 1952).

In apparatus of the class described, a spindle, thread guide support means mounted for rotation with the spindle, the support means being also mounted for axial movement with respect to the spindle, an anti-friction bearing seated on the support means, and a thread guide carried by the anti-friction bearing.

Winding and Spooling B 5

Apparatus for regulating yarn tension

Paul J. Campbell (to Raymond Laboratory, Inc.); U. S. P. 2,610,813 (September 16, 1952).

The combination in a tension regulator for a moving strand of yarn, or means for resisting the movement of the yarn to cause tension therein, fluid actuated means acting on the resisting means to cause the latter to apply resistance to the yarn, means for supplying fluid under pressure to the fluid actuated means, and means dependent on the tension in the yarn after passing the resisting means for varying the pressure of the fluid supplied by the fluid supplying means to the fluid actuated means to maintain the yarn tension substantially constant.

Arrangement for producing a spun short-fiber yarn

Rudolf Wildbolz (to Actiengesellschaft Joh. Jacob Rieter & Cie.); U. S. P. 2,611,931 (September 30, 1952).

Apparatus for producing spun yarns from continuous filaments.

Automatic bobbin unwinding device

Walter Schweiter Ltd.); U. S. P. 2,610,805 September 16, 1952).

In mechanism for bobbin unwinding, two feelers, one of the feelers being located to scan an uncovered portion of a bobbin being unwound and the other of the feelers being located to scan coils on the bobbin, and one of the feelers being in engagement with the other to affect the action of the latter, and a controller connected and responsive to the feelers to stop the unwinding operation.

Constant tension winding

Robert P. Lathrop (to E. I. du Pont de Nemours and Company); U. S. P. 2,610,806 (September 16, 1952).

A device for winding a filament under constant tension comprising a spindle driven at constant speed; an inner shell mounted on the driver by the spindle; bearings at the top and at the base of the inner shell; mounted on the bearings an outer shell freely rotatably in respect to the inner shell; mounted at the top of and within the inner shell a magnet; mounted at the top of and within the outer shell a drag member located within the field of the magnet and affected there by to rotate the outer shell upon rotation of the magnet; and at the bottom of the outer shell a flange to support a take-up unit on which the filament is wound.

Method of threading a ring twister

Guillaume M. A. Kayser and Johan M. Meys and Pieter van Dijk (American Enka Corp.); U. S. P. 2,617,244 (November 11, 1952).

Method of threading a ring twister comprises leading a thread end to a point of temporary collection, drawing the thread into the traveler which is then rotated, anchoring the resulting.

New rings mean new life for twisters

James H. Kennedy. *Textile World 102*, 116, 210, 212 (December, 1952).

A sales-yarn mill wanted bigger twister packages, mainly to improve yarn quality, so a method was found by which larger rings could be

used without any other changes. The results are: fewer knots, a cleaner room, increased workloads, cleaner yarn, more even yarn, and decreased costs. A 2¾ inch ring was installed on top of the rail in place of the 2⅛ rings which fitted in the rail. Tension and uniformity were not affected.

New twister has adjustable gauge

Anon. *Textile World 102,* 151-152 (December, 1952).

A new twister with adjustable gauge has been developed by J. A. Bradshaw, of Greenville, S. C. The outstanding feature of the new frame, called the Flexal, is the almost complete adjustability of gauge, including ring rail, spindle rail, roller beam, thread board, and creel. Gauge is adjustable from a minimum of three inches to any maximum, and traverse is adjustable from 6 to 10 inches.

Stop motion

Thos. M. Ripley, Carson P. Ellis and Frank G. Powers (Robbins Mills Inc.); U. S. P. 2,619,789 (December 2, 1952).

A stop motion for twisters is provided with means which operates automatically when the yarn breaks to elevate a top roll out of engagement with a bottom roll thereby preventing further rotation of the top roll and interrupting feeding of the yarn.

Strand winding machine

Evelyn L. Whitby (Raid-Beau Products Co.); U. S. P. 2,617,602 (November 11, 1952).

A strand winding machine comprises means for rotatably supporting a core, independent rotating drive means engaging each end of the core, and means for engaging either of the drives.

Twisting tube assembly

William Hardacre and Edgar Beaumont Courtaulds Ltd.); U. S. P. 2,619,790 (December 2, 1952).

A twisting tube assembly comprises a rotatable tube which is so curved that both the entrance and exit holes are concentric with the axis of rotation of the tube and part of the channel within the tube is eccentric to the axis of the rotation of the tube.

Winding machine

Brooks Marcellus (Barber-Colman Company); U. S. P. 2, 618,441 (November 18, 1952).

In a machine for winding yarn, a first back and forth movable tensioning member deflects

the yarn, a second member deffects the yarn in the opposite direction for changing the amount of variation in the tensioning caused by the first member.

Yarn guide for automatic bobbin winders

John W. May (to Deering Milliken Research Trust); U. S. P. 2,611,547 (September 23, 1952).

In an automatic winding machine having a chuck to which bobbins are successively directed for winding yarn thereon and also having a yarn guide spaced substantially from the bobbin for directing the yarn thereto, an auxiliary yarn guide normally disposed adjacent the first yarn guide and means automatically operable upon a filled bobbin being ejected from the chuck and a succeeding empty bobbin being received by the chuck for moving the auxiliary yarn guide to occupy a position immediately adjacent the head of the bobbin to thus direct the yarn thereto to insure that the yarn will be drawn across the head of the bobbin in a helix of relatively large pitch.

Yarn tensioning device

Karl Buder (Josef Sailer Mascinenfabrik); U. S. P. 2,618,445 (November 18, 1952).

A yarn tensioning device comprises a casing having stationary guides, a carrier pivotally mounted therein having guides which align with the stationary guides forming a passage for the yarn, the carrier guides move in and out of alignment with the stationary guides to maintain proper tension.

Yarn tensioning device

Robert J. Taggart, U. S. P. 2,618,444 (November 18, 1952).

A yarn tensioning device comprises a cushion over which yarn is guided, a yarn pressing binder movable toward and away from the cushion, a movable yarn guide activated according to the tension in the yarn with means attached thereto for moving the binder.

Yarn traverse for yarn winding machines

Edward J. Heizer (to Specialties Development Corporation); U. S. P. 2,611,548 (September 23, 1952).

A yarn traverse for a winding machine comprising a support, a pair of shafts mounted on the support at an angle with respect to each other, a gear on each of the shafts in meshing relation with the other, a generally conical cup-shaped member having a generally conical heart-shaped

yarn guiding edge surface mounted on each of the shafts constructed and arranged to cooperate with each other and provide an endless slit in which yarn is adapted to be passed back and forth, a drive shaft on the support, and a gear on the drive shaft in meshing relation with one of the gears on one of the pair of shafts.

Yarn-winding machinery

Edward Kinsella (to Celanese Corporation of America); U. S. P. 2,611,549 (September 23, 1952).

A yarn winding machine comprising a series of winding spindles, a series of yarn guide means, one for each spindle, a traverse rail movable to-and-fro parallel to the spindles for effecting relative movement between the guide means and the spindles, a traverse lever having one part connected to the traverse rail, a block to which the lever is pivoted, guides for the block, means connected to another part of the lever for rocking the lever to and fro about its pivot to effect the traverse. and means for moving the block to and fro at a lower frequency, so as to vary the field of traverse, the guides being angularly adjustable so as to adjust the direction of the motion of the pivot and consequently the mode of variation of the field of traverse.

Yarn Processing B 6

Process of producing a textile product

Ralph James Mann and Jozef Biedawski (to British Celanese Limited); U. S. P. 2,610,384 (September 16, 1952).

Method of forming a skin on a mass of fibrous material comprising a substantial proportion of thermoplastic fibers, which comprises slightly compressing the mass being applied along intersecting portions each 8 to 10 mils in width and spaced with frequency of 30 to 40 per inch, and applying radiant heat upon the exposed parts of the face between the intersecting portions for a period sufficient to cause a layer of the thermoplastic fibers to become adhesive, terminating the exposure before the inner fibers become adhesive, allowing the exposed fibers to cool sufficiently to set and afterwards removing the pressure.

Yarn applications B 9

Apparatus for treating yarn

Edgar Dare Bolinger and Robert G. Berner (to Deering Milliken Research Trust); U.S.P. 2,611,172 (September 23, 1952).

An apparatus for treating yarn comprising,

in combination, means for assembling a plurality of ends of yarn in sheet form, means for supplying liquid treating material to the thus assembled ends of yarn, yarn guide means associated with the last mentioned means, a housing for passage therethrough of the treated yarn ends, locking means associated with the housing for holding the guide means in yarn engaging position, a pair of squeeze rollers disposed in the housing and engageable by the yarn ends for removing excess liquid material from the assembled treated ends, drying means for drying the assembled treated yarn ends, drawing means for the yarn ends comprising pair of spaced rolls and an idler roll supported by, and in frictional engagement with both spaced rolls, driving means for rotating one of the pair of spaced rolls, gear means coupling the pair of spaced rolls together for driving the other of the pair of spaced rolls, means for separating the sheet of dried treated yarn ends into individual ends, and means associated with the drawing means for driving the squeeze rollers.

FABRIC PRODUCTION C

Yarn Preparation C 1

Calculation of the cone angle on cone warping machine

Arthur Harenslak. *Melliand Textilber. 33,* 926-28 (1952).

From the geometrical form of winding on the warping cylinder, the values which influence the cone angle are calculated and their mathematical interrelationships are explained. Formulae for calculating the cone data in all cases, are derived from these values. A simple process for determining the closeness of winding is given.

Direct measurement of the steam air content in drying chambers

Robert Mulsow. *Melliand Textilber. 33,* 967-9 (1952); *in German.*

The author describes a measuring apparatus consisting of a cooler, condensate measuring vessel, air clock and suction device, with which direct measurements of the steam—air content of a drying chamber can be carried out. This apparatus functions even at a steam content of 5-10%. This paper also gives a method of calculating the time required for starting the drying chamber, the time required for achieving constant conditions of steam-air conditions.

Expansion lease comb

Thomas E. Waston, U. S. P. 2,610,383 (Sep-

tember 16, 1952).

A comb for guiding the yarns of warpers and other textile machines having in combination a plurality of comb sections, and means shifting the sections into either sharper or flatter angular relation to the yarns, the comb sections comprising dents having integral portions thereof pressing against each other through their inherent resilience to form a series of eyes alternating with open intervals throughout the length of the comb to form a lease in the yarns, the eyes being adapted to be opened for the admission of the yarns by the flexing of the dents under pressure of yarns slid sidewise down between the dents.

Method of and device for ensuring the proper order of threads isolated from a sheet of warp threads

Svend Sigurd Christie Fleischer, U. S. P. 2,610,382 (September 16, 1952).

A thread isolating device for ensuring the proper order of threads isolated from a sheet of warp threads that are crossed over pliable cross members, comprising pliable cross members for holding warp threads crossed, at least one thread isolating member disposed outside of the sheet of threads and so constructed and arranged as to draw a portion of one of the pliable cross members out of the plane of the sheet of threads to isolate the one thread, means for intermittently operating the thread isolating member, a thread swipe, and means for operating the thread swipe to carry the isolated thread forward past the thread isolating member.

Viscosity in warp-size preparation

Anon. *Textile World 102*, 145 (December, 1952).

The amount of size picked up to warp yarns in slashing depends in part on how well the size holds its viscosity. The study reported in this paper was made to find out how different pastes behave during the cooking cycle. Size materials tested included corn, potato, rice, and wheat starches and sago and tapioca flours.

Weaving C 2

A 5-minute check for W-3 automatic magazines

Eugene P. Schremp. *Textile World 102*, 124-125, 216, 218 (December, 1952).

Don't let your loomfixers work on your automatic stationary magazines unless you're sure that something is wrong. The following methods should be used in checking magazine failures.

(1) Be sure that the magazine and not some other motion is at fault. (2) Check the setting of the magazine to the loom. (3) Check the settings of the magazine itself. Procedure for making these checks and the recommended settings are given in article.

A new circular loom

Hans Focke. *Melliand Textilber. 33*, 925-26 (1952).

The author describes a new circular weaving process which has important innovations compared with those used hitherto, and for which he claims patent rights. In particular, the shuttle drive, the harness mechanism, and the lay motion have a special construction. The shuttles are 30 cm long and have a diameter of 15 cm. and can thus contain a great quantity of filling. A circular loom of this type, with a diameter of 1 m and operating 6 shuttles at 100 revolutions per minute, has a production approximately nine times that of an ordinary loom.

Are your weave-room methods as modern as these?

Anon. *Textile World 102*, 117-118 (December, (1952).

See front section.

Are your weave-room methods as modern as these?

Anon. *Textile World 102*, 117-119, 190-192 (December, 1952).

At the fall meeting of the Textile Operating Executives of Georgia, the following points were set forth: (1) the Diehl drive is superior to conventional drives, (2) the selection of men trained as loomfixers is more important than the training methods, (3) endless checkstraps give better service than other straps and make pickers, picker sticks and shuttles last longer (provided weave-room humidity is constant). Views on the elimination of "jerk-backs," setting of Stafford thread cutters, elimination of tight selvages, warp tying with the Barber-Coleman portable tie-in machine, and the best type of roll covering are discussed.

Bobbin battery indexing mechanism

Karol Kulczycki (to Steel and Alloy Tank Company); U. S. P. 2,611,394 (September 23, 1952).

In a loom, a lay for a shuttle, a rotary hopper, a mechanism for transferring fresh bobbins successively from the hopper into the shuttle and comprising a transfer arm adapted to engage a bobbin on the hopper and movable to eject it

therefrom towards the shuttle, and means for rotating the hopper step by step to bring the bobbins thereon successively into transfer position with respect to the transferring mechanism at the end of each bobbin transfer operation and comprising a ratchet gear connected for rotation with the hopper, a lever arm mounted for angular movement about a pivot axis, a feed pawl for the ratchet gear supported on the lever arm and adapted to be moved from one interdental space of the gear to another as the lever arm moves angularly in one direction about its pivot axis, a link connection between the arms for moving the lever arm in the direction about its pivot axis as the transfer arm enters into the late phases of its transfer operation, and a transmission between the lay and the lever arm for turning the lever arm about its pivot axis and in the opposite direction to rotate the ratchet gear one step at the end of each bobbin transfer operation.

5 steps to keep your looms in good condition

Richard B. Pressley. *Textile World 102,* 132-133, 256 (December, 1952).

Five steps are used by the loomfixers in a South Carolina mill to keep the weave-room running at peak efficiency. These steps in checking the looms are: (1) the Roper letoff, (2) the take-up, (3) the transfer motion, (4) general checking and (5) lubrication. Results of the maintenance program are: high production for a 3-year period, E-model looms in excellent mechanical condition, and few flagged looms because they are already fixed.

Georgia Textile Parley

Anon. *America's Textile Reporter 66,* 9, 15-17, 43-44 (November 13, 1952).

Discussion of slashing and weaving problems featured the semi-annual meeting of the Textile Operating Executives of Georgia at the Harrison Hightower Textile Building at Georgia Institute of Technology. Seventeen Georgia mills and mill groups operating 1,086,390 spindles participated in answering a series of 32 questions covering their practices on slashing and weaving. A few of the questions asked were: What program is used to prevent slasher squeeze rolls from rusting? In slashing a warp with a single yarn in the body and ply yarn in the selvage, how do you control the tension in the ply yarn? How is lint kept out of yarn on adjacent slashers when it is being removed from beneath the slasher and creel? How is a rolled selvage prevented? What is the best method of obtaining uniform size pick-up on

yarns of different counts? What is your method of selecting and training loom-fixers?

How to make your loom leather last longer

Richard B. Pressley. *Textile World 102,* 104-105 (December, 1952).

See front section.

How to make your loom leathers last longer

Richard B. Pressley. *Textile World 102,* 104-105, 288, 290, 292 (December, 1952).

About half the total supply cost of looms is spent on leathers (leather or rubberized fabric). Article describes methods for making saving on checkstraps, harness strapping, and pickers. Points brought out are (1) Binder leathers must be protected, (2) harness strapping can be saved through correct installation and adjustment, (3) pickers can be made to last longer by correct selection of both picker and picker stick, and proper adjustment of power on picker stick, parallel motion and parallel foot on rocker shaft.

How to run a big rayon-weaving job

Anon. *Textile World 102,* 112-113, 188, 190 (December, 1952).

In this article, a mill superintendent tells how he keeps 1,700 looms running at peak efficiency. The techniques of supervision, handling of seconds, and ways in which loom maintenance, cleaning and training are taken care of are enumerated.

Latest refinements to the Fischer let-off motion

Anon. *Skinner's Silk & Rayon Record 26,* 1356 (November, 1952).

See front section.

Opelika mills made 22-in. looms from used 40-in. E-Model drapers

Paul J. Gulledge and W. N. Scroggins. *Textile Industries 116,* 114-117.

See front section.

Pattern maker for looms

Ewald Kreft and Albert Eichelberger, U. S. P. 2,610,653 (September 16, 1952).

A pattern maker for a loom comprising a plurality of harness frames, means for moving the harness frames upwardly, a plurality of elements attached to the harness frames, there being one of the elements associated with each of the harness frames, a plurality of structures related to the plurality of elements, each of the elements having one of the structures related thereto, a shoulder formed on each of the elements which is

adapted to be engaged by a portion of the related circular pattern for controlling actuation of the plurality of structures, a pattern guide, and means for subjecting the pattern guide to movement which feeds the pattern intermittently, the last-mentioned means comprising a shaft having a crank at an end thereof which operatively engates a portion of the pattern guide, and means for rotating the shaft in response to movement of the harness frames.

Pile fabric loom

Samuel P. Parker (to Callaway Mills Company); U. S. P. 2,610,652 (September 16, 1952).

In a loom having separate means for supplying pile and ground warp yarns, means for forming the warp yarns into sheds, the means raising the pile yarns higher than the ground yarns in the upper line of the shed, means for inserting a weft yarn into each shed, and a lay mounted to swing about an axis and carrying a reed for beating up the inserted weft yarns, the reed being mounted on the lay for endwise movement transversely of the warp yarns, the combination of a pair of uprights pivoted below the warp yarns for swinging movement parallel to the yarns, a bar extending across and above the warp yarns and carrying a row of hooks projecting toward the rear of the loom, means for mounting the bar on the uprights for pivotal movement, means for intermittently swinging the uprights back and forth with the lay to cause the hooks to pass between the raised pile warp yarns on the back movement of the uprights, means for shifting the reed endwise, when the hooks lie between the yarns, to cause the yarns to be caught by the hooks, and means acting on the mounting means to rock the bar, as the uprights move back and forward, the rocking means including an arm secured to the mounting means and a guide engaging and swinging the arm.

Quilling, weaving, and cloth-grading tips from Belton weaving mill

J. Harry Hill, Belton Weaving Co. *Textile World 102,* 120-121 (December, 1952).

Among the points enumerated in this article are the fact that sometimes it is necessary to change the winding of the filling to get correct operation in the loom, shuttles are carefully selected, the looms are operated as built (without extra attachments) and at the specifications of the manufacturer, the looms are checked when a

new warp is started, and constant supervision and early inspection of cloth are used to keep seconds down.

Sand roll and cloth roll mechanism

Fritz B. Peterson (to Draper Corporation); U. S. P. 2,610,655 (September 16, 1952).

In a loom the combination of a hollow sand roll and a cloth roll shaft upon which the woven fabric is wound as it is advanced by the sand roll, a common shaft for rotatably supporting the hollow sand roll and from which the cloth roll shaft is suspended, and a resiliently applied biasing means enclosed within the sand roll for the common shaft for urging it in a direction to draw the suspended cloth roll shaft and fabric thereon toward the sand roll.

Take-up mechanism

John Rinne, Everett H. Ashton, Robert G. Mallard and Francis Gerard Lake, U. S. P. 2,611,395 (September 23, 1952).

In a loom, a frame web extending along one side of the loom and having an opening, a take-up roll gear, a take-up main drive shaft, a gear transmission between the shaft and the gear, a casing for the transmission passing through the structure so as to retain the element and its associated harness frame in an elevated position, a web opening from the outer side thereof, and having an outer side wall mounted on the frame web, the outer side wall having an opening affording access to the transmission in the interior of the casing, and the casing comprising a removable cover plate for the last-mentioned opening on the outer side of the frame web.

Tucking cloth bale cover saves labor, prevents soiling

Staff. *Textile Industries 116,* 103-104 (December, 1952).

See front section.

Special Fabrics C 4

How mills produce nonwoven fabrics

Howard E. Shearer, American Viscose Corp. *Textile World 102,* 141 (December, 1952).

In the last 10 years the use of bonded-fiber fabric has increased from almost nothing to 25-million lbs. and its use will probably double about every three years for the next ten years. The way in which the fabric is constructed and dyed, and some of its physical properties are set forth in the article.

Startling production increase predicted for non-woven fabrics

Anon. *America's Textile Reporter 66,* 65-67, 82 (November 20, 1952).

Development of new equipment for the processing of bonded fiber fabrics and an increase in the number of manufacturers entering this field were given as some of the reasons for assuming that this new industry will double its output about every three years for the next ten years or more, according to Howard E. Shearer, textile research department, American Viscose Corp. Article describes new methods, machinery and developments in the bonded or non-woven fabric field.

Fabric applications C 6

Fibrous filter medium

William I. Taylor and John W. Grebby (Celanese Corp. of America); U. S. P. 2,620,283 (December 2, 1952).

Process for producing a filter medium for spinning solutions of cellulose acetate comprises impregnating a sheet of cellulose fibers with a solution of water-soluble cellulose ether, compressing the sheet and removing the water therefrom.

Moisture-proofing films

Chas. R. Oswin (British Cellophane Ltd.); U. S. P. 2,618,575 (November 18, 1952).

A process for moisture-proofing water sensitive non-fibrous sheets comprises guiding a sheet into parallel relation with another sheet and feeding an aqueous dispersion of a vinylidene chloride/acrylonitrile copolymer to the surface of the sheets at a converging space between two rolls.

Non-woven fabric

H. E. Shearer (American Viscose Corp.); U. S. P. 2,616,084 (November 4, 1952).

A seamless fabric bust-receiving and supporting member comprises a shrunk fabric formed exclusively from thermoplastic resin yarns having the capacity to shrink spontaneously while remaining intact at an elevated temperature.

Non-woven fabric

Richard MacHenry (American Viscose Corp.); U. S. P. 2,617,102 (November 11, 1952).

A seamless breast supporting member heat molded from a knitted fabric of heat shrinkable yarns wherein a portion of the peripheral surface comprises a generally trapzoidal portion

which distributes the weight of the breast toward and along the sides of the member.

STANDARD FINISHING D

Continuous desizing of cotton and rayon fabrics

J. Andrew Clark and G. L. Losie. *Textile Industries 116,* 110 (December, 1952).

The use of malt extract as a desizing agent was the first step in the trend toward the development of modern enzymatic preparations. Introduced about 1900 for textile use, the extract was prepared from a mash of the dry malt in water and evaporation of the liquid down to a sirupy consistency. As the interest in more efficient desizing agents increased, enzymatic preparations from animal, fungal, and bacterial sources were developed.

Amylolytic enzymes may be considered organic catalysts of a very specific nature whose only function is to promote hydrolysis of starch into soluble components. In textile desizing it is the amylase which causes degradation to the soluble components. Amlolytic enzymes from different sources require different optimum conditions under which they produce their maximum effects.

Heat knives cut rayon strip

America's Textile Reporter 66, 19 (November 13, 1952).

The problem of edge-fraying when cutting acetate rayon into strips has been eliminated by the Cameron Machine Co. through the use of General Electric Calrod tubular heaters on the cutting knives of a recently announced slitting machine. The straight, electrically heated blades of the new machine melt razor-thin slits in the rayon as the fabric passes between the blades and rewinder platen roll. While cutting, the blades fuse minute strips along the edges of the cuts to prevent separation or beading. The edges cool instantly, it is said, and there is no danger of fused layers in the rewound rolls.

DYEING AND PRINTING E

AATCC Intersectional contest papers

Anon. *Textile World 102,* 139 (December, 1952).

Included in the article are abstracts of the first three prize-winning papers of the AATCC intersectional contest. They are: First prize, "Dacron and Polyacrylics—How To Print Them;" second prize, "How to Strip Hydrophobic Fibers;" and third prize, "How Variables Affect Dye Fixation in Padding."

Bond dyeing machine uses shotgun technique

George M. Moisson. *Textile World, 102,* 123 (December, 1952).

Savings in time, dyestuffs, and floor space are claimed for the new dyeing machine shown by Boyce C. Bond, inventor, at a demonstration at Hussong-Walker-Davis Co., Philadelphia. Versatility in the types of dyestuffs used, flexibility for short runs, and better and quicker diffusion of dye solution throughout the fabric are among the advantages claimed. The continuous-dyeing machine has (1) injection plates that direct dye liquor onto the face and back of the fabric simultaneoulsy, (2) a filtering system that keeps plate orifices clear, and a method for back-flushing alternate sets of filters during runs, (3) hydraulic lifts to raise upper plates for easy threading and cleaning of the units, (4) steam-chest heating units that will present a smooth, coil-free surface in each unit for easy cleaning.

Dyeing process

George C. Ward and Wm T. Haggerty, Jr. (Celanese Corp. of America); U. S. P. 2,620,257 (December 2, 1952).

A vat dye pigment pad process for cellulose ester textiles uses a water-miscible organic swelling agent in the alkaline hydrosulfite reducing bath.

New rayon dyeing method

Anon. *America's Textile Reporter 66,* 128 (November 20, 1952).

A continuous method for dyeing rayon in heavy shades of vat colors has been developed by General Dyestuff Corp. Reversing the usual connotation of high speed in relation to continuous methods, the process, known as "Genray," reduces the speed of the operation to allow for the slower migration of color to and diffusion into viscose in comparison with the less hydrophobic cotton.

The company cites the following advantages: 1. Minimizing of side-to-center shading as compared with pad-jig applications. 2. Excellent end-to-end uniformity. 3. Equal or better coverage and fastness properties than are obtained on the jig. 4. Less stretching of the fabric due to tension.

Prevention of the reduction of direct dyees

H. Hansen. *Textil Praxis 7,* 536-38 (July, 1952); *J. Soc. of Dyers and Cols. 68,* 414 (1952).

Many direct dyes on cotton and other cellulosic

materials are reduced in dyeing or on subjection to treatments involving the use of steam in the presence of small amounts of alkalis. This defect can be overcome by the addition of Sustilan N (FBY), which is a mixture of ammonium salts and amides of higher fatty acids, sulphonic acids, and substituted carboxylic acids of anion-active character.

Processing controls reduce effluent waste

R. H. Souther, Cone Mills Corp. *Textile World 102,* 143 (December, 1952).

With the advent of new redox control instruments, mills can now make better evaluations as to the amount of dye to use to avoid unnecessary waste of dyestuffs. A textile plant can thus accomplish three important results: (1) curb pollution of streams by reducing the amount of wastes being emptied into them, (2) effect savings by using less chemicals for textile processing, and (3) reduce the cost of treating textile waste.

Spectrophotometry is practical at Mohawk Carpet Mills

John J. Hanlon. *Textile World 102,* 141, 143 (December, 1952).

A spectrophotometer is used at Mohawk Carpet Mills to coordinate the activities of dyehouse and laboratory. The instrument analyzes the color of an object by measuring the light reflected from an opaque object or transmitted through a transparent material, at each wave length in the visible spectrum. It is used to control the dyeing of raw-stock wool batches.

Successful dyeing of orlon possible with new copper method

Anon. *America's Textile Reporter 66,* 79, 81 (November 20, 1952).

Copper dyeing is the only method now available by which Orlon acrylic fiber can be dyed a full shade range at temperatures obtainable in conventional dyeing equipment, according to R. H. Blaker of Jackson Laboratory, E. I. du Pont de Nemours & Co. The process is also applicable to dyeing the fiber where equipment is available for dyeing at 250° F., and Orlon can be dyed rapidly and with excellent fastness properties at the higher temperatures. Article outlines methods and techniques used in this process.

Successful yarn beam dyeing requires close warping, dyeing process control

Anon. *America's Textile Reporter 66,* 55, 57, 97 (November 20, 1952).

The successful dyeing of yarn on beam is the

result of close control over warping as well as the actual dyeing on the beams, according to the Organic Chemicals Department of E. I. Du Pont de Nemours and Co. The density of the yarn on the beam and the fact that the rate of circulation of dyestuff through the beam must be lower than for package dyeing to prevent blowing are considered as critical factors. Data and results of tests and some recommendations are made in the article.

SPECIAL FINISHING F

Cloth texturing apparatus

David E. Mulholland, U. S. P. 2,617,170 (November 11, 1952).

Cloth texturing apparatus comprises a cloth feed back-up roll and texturing means associated therewith, adjustable means for varying the extent of wrap of the cloth around the back-up roll and tensioning means for maintaining the cloth under tension.

Conditioning—how it effects crease recovery

Anon. *Textile World 102,* 145 (December, 1952).

This paper reconciles the apparently unexplainable paradox often observed in laboratories—that untreated rayon fabrics have better crease recovery properties before resin treatment than immediately after treatment—and studies the effect of conditioning on both treated and untreated fabrics.

Fabric treating resin

Jas. K. Dixon (American Cyanamid Co.); U. S. P. 2,617,744 (November 11, 1952).

Process comprises immersing a non-woven fabric of cotton and viscose fibers in a neutral colloidal aqueous solution of a cationic polymerized modified urea-formaldehyde condensation product, and then heating the fabric to cure the condensation product to a water-insoluble state.

Modifications of technique add versatility to vinyl coatings

Thomas J. Kerr. *Textile World 102,* 147, 149, 204, 206, 208, 210 (December, 1952).

The following points are enumerated in the article. 1. Plastisols may be diluted with organic liquids or made more viscous with gelling agents. 2. Organisols may be tailored to meet end-use requirements by careful selection of stabilizers and plasticizers. 3. Resin solutions require proper choice of solvents and careful blending of pigment, fillers, and plasticizers. 4. Latices must be

stable when dispersed; PH must be maintained high enough to prevent coagulation; homogenizers or colloid mills are best for making oil-in-water emulsions before dilution.

Moth-proofing woolen fabrics

Ida M. Rassmussen and Edward F. Rogers (Merck and Co.); U. S. P. 2,617,747 (November 11, 1952).

A process for moth-proofing woolen fabrics comprises treating the fabric with a solution of N, N'-methylene bis (d -chloro) acetamide.

Textile finishing composition

George L. Royer and Chester A. Amick (American Cyanamid Co.); U. S. P. 2,620, 332 (December 2, 1952).

Textile finishing composition for shrink-proofing woolen textiles comprises a solution of methylated methylol melamine and triethanolamine silicofluoride.

TESTING AND MEASUREMENTS G

Clothing and Fabrics G 1

Theory of water-resistant fabrics

G. H. Segall. *Textile Res. J. 22,* 736-41 (1952).

A theory of water-resistant fabrics is developed which reconciles anomalies in earlier ideas of the effects of tight weaving and yarn porosity on water-resistance. It is shown that high water-resistance is associated with a correspondence between the hydrostatic pressure-resistance of the pore of the fabric and the interfiber penetration pressure of the fabric pore walls. It follows that the smaller the pore size at which such correspondence is achieved, the higher will be the level of water-resistance obtained. A mechanism accounting for the effect of such correspondence is proposed.

Instruments and Instrumentation G 2

Mohawk carpet mills controls quality by instrumentation

Anon. *Textile World 102,* 106-197 (December, 1952).

Many phases of carpet manufacture can be protected against errors that occur in mass-production methods. Human error can be minimized and quality production assured by proper instrumentation. Mohawk Carpet Mills, Amsterdam, N. Y., has proved that instruments pay for

themselves: (1) in the laboratory—by recording testers that keep a permanent record of all necessary data, (2) in the dyehouse—by automatically feeding acid to dyebaths and by controlling the dyeing cycle, time, and temperature, (3) in twist setting—by controlling air temperature in the skein dryers, (4) in slashing—by controlling size-cooking temperature and time, storage temperature, and size-box level and by controlling and recording dry-can and size-box temperature.

Vibroscopic method for determination of fiber cross-sectional area

D. J. Montgomery and W. T. Milloway. *Textile Tex. J. 22,* 729-35 (1952).

The elementary theory of the vibroscope, a device for determining mass per unit length of a fiber, is reviewed and the corrections from the simple law due to elasticity are discussed. Various forms of apparatus are described. Comparisons of vibroscope methods are given. Agreement is found within the limits of precision of the methods.

Yarn tester simplifies finding coefficient of variation

Anon. *Textile World 102,* 154 (December, 1952).

See front section.

TEXTILE MILLS H

After a 65-year delay-Springs builds a general office

Richard B. Pressley. *Textile World 102,* 127-129 (December, 1952).

The first president of Springs Cotton Mills used a bandstand for his office when the first plant was built in 1887. Since then, no regular office building has been provided. The present president's office has been a railroad business car on his own sidetrack. Springs has finally built a general office that is worth the 65-year wait. The new building includes a new research laboratory, a pilot spinning mill and a cotton department. A number of pictures of the new building are included in the feature.

An easy way to allow for machine interference

T. F. O'Connor. *Textile World 102,* 101 (December, 1952).

See front section.

Anti-corrosive process for textile machinery

Anon. *Skinner's Silk & Rayon Record 26,*

1374, (November, 1952).

See front section.

Beam conveyor saves mill $25,000 annually

Staff. *Textile Industries 116,* 91 (December, 1952).

Firestone Mills of Gastonia, N. C., saves $25,000 annually in handling beams and box trucks by means of a new six-story-high conveyor. The conveyor handles twice as many beams per day. Freight elevators are free of this transportation. 1300-pound beams of rayon are transported to fourth and fifth floors of the mill, empty beams are returned, and 900-pound box trucks are carried between twisting and weaving.

Everyone at Bangor Mills benefits from retirement plan

Richard C. Scott. *Textile World 102,* 130-131 (December, 1952).

Article describes the retirement plan now in effect at Bangor Mills, a modern tricot-knitting and dyeing plant at Bangor, Pa. Among the advantages claimed for this plan are: both employees and employers are sold on the benefits of this 9-year-old employee-retirement plan, pensions at normal retirement age can run from $20 to $500 a month, and the company foots the entire insurance bill, but yet does not find the cost excessive.

Hard-top concrete floors

Staff. *Textile Industries 116,* 121 (December, 1952).

The choice of hard top flooring is based on modern engineering and plant construction practices, plus the independent preference of the mill owner. The floors had to be tough, durable, "impervious" to oil spillage, easy to keep clean, and last, but far from least, easy on the feet of employees.

The high density floors are "impervious" to oil spillage, provided the surface is given normal care. An ordinary concrete floor with its relatively low density would almost immediately absorb any oil spilled upon it.

Here's what mills in Alabama do

John Mebane. *Textile Industries 116,* 87 (December, 1952).

See front section.

Increased work loads granted Pequot seen as step to prevent loss to South

Anon. *America's Textile Reporter 66,* 17 (November 20, 1952).

A weaver's work assignment of forty 90-inch looms, which is double the present work load, was established last week for the Pequot Mills in its sheet and pillow case manufacturing plant at Salem, Mass. Mr. Sidney A. Wolff, New York attorney who acted as impartial arbitrator said the change was the first to be made in loom assignments in 22 years at the Pequot Mills. In his ruling, Mr. Wolff said he felt an upward revision was demanded by the assignments effective in competitive mills both in the North and South, in some of which the weavers tend many as 50 looms.

Lighting in the clothing industry

Howell, J. W. *Textile Industries and Fibres* 8, 90 (September, 1952).

Article discusses some of the factors in obtaining correct lighting in the clothing industry, and some of the advantages resulting from the providing of correct type and amounts of light.

Lubrication of textile machines

H. Schafer. *Melliand Textilber 33,* 920-24 (1952) ; *in German.*

The author gives a comprehensive survey of the problems of modern lubrication in the textile industry and discusses in detail the individual branches of textile technique with their specific demands on lubricants. He compiles a plan of the lubricants required for each individual machine.

Major reasons given for opposition to further cuts in textile tariffs

Anon. *America's Textile Reporter 66,* 45 (November 13, 1952).

The American cotton textile industry is opposed to further tariff reductions and has good reasons for its stand on the matter. One of the best analyses of the industry's position was made recently by Percy A. Howe, Pres. of the American Thread Co. "There is a general tendency to attribute most of the world's economic ills to our tariff structure," he observed. Both at home and abroad, there has been much agitation for a reduction of American tariff rates on cotton goods, and to an appreciable degree, this agitation has been successful through the operation of the Trade Agreement Act. Reasons given for opposition to further reductions are (1) the fact that in the great majority of fabric classifications, as is true also in yarns, U. S. industry is more than adequate for the domestic American market, (2) the capital investment per spindle in the U. S. is

from 50 to 75 percent higher than in any other country, and twice as high as in most of the lower cost countries, and (3) wages in the U. S. are far higher than those in any competing country.

New General Electric motor

America's Textile Reporter 66, 31 (November 13, 1952).

General Electric Co. recently announced development of a new spinning-frame motor, especially designed for the Saco-Lowell SG-1, "Gwaltney" spinning frame, in its small and medium motor department. Totally-enclosed, fan cooled and self cleaning, the model is designed to save floor space by fitting under the spinning frame. Stator frame, end shields, and fan guard have smooth surfaces to prevent lint accumulation, the firm states.

New textile chemicals plant

Anon. *America's Textile Reporter 66,* 117 (November 20, 1952).

Acetyl chemicals are now being produced by Celanese Corp. of America in a new Texas plant nearing completion. The plant has been set up to produce acetic acid, acetaldehyde and acetic anhydrine. The last chemical is being introduced to the textile industry for the first time, officials of the firm state.

"No-strain-in-our-jobs" is theme of materials handling program

Anon. *Textile World 102,* 95-99 (December, 1952).

Firestone Textiles, Gastonia, N. C., set out to take the strain out of their handling jobs by installing mechanical materials-handling equipment. Hoists, overhead rails, conveyors, electric trucks and tractors, and an automatic tray elevator have virtually eliminated manual handling of bulk materials. Article includes pictures and explanations of the improvements which have been installed to reduce manual handling.

Opportunities for young men in textiles exceed other industries, says Milliken

Anon. *Daily News Record 237,* 2, 6 (December 5, 1952).

See front section.

Piedmont Textile Meeting

Anon. *America's Textile Reporter 66,* 11, 13 (November 20, 1952).

The recent meeting of the Piedmont Division of the Southern Textile Association at Belmont,

N. C., featured a varied program, including addresses as follows: The Value of Time Study in Attaining Maximum Output, by Mr. E. G. Michaels, II, of Henderson, Lindsay & Michaels, Greensboro, N. C.; Safety Programs Inspired by Top Management by Robert G. Sharpe, Pacific Mills, Columbia, S. C.; and a paper on "The Preparation and Application of Starches for Warp Sizing" by Herbert C. Olsen, Textile Chemist of National Starch Products, Inc., New York City.

Portable yard ramp for loading freight cars

Staff. *Textile Industries 116,* 83 (December, 1952).

Dock facilities are not necessary when a new portable yard ramp is used. Available in five standard sizes, all are 30 feet long but vary in widths of 60 to 70 inches. Capacities range from 6,000 to 16,000 pounds. Hydraulic lifting mechanism is used to raise one end of ramp after the other is positioned in front of freight car. Mfr: Magnesium Company of America.

Textile motor provides positive lint expulsion

Staff. *Textile Industries 116,* 81-82 (December, 1952).

Effective cooling and lint expulsion are provided by a new screenless open textile motor. Lint-ladened air enters both end shields through large intake openings and is discharged through openings located farther out in the same end-shields. Cooling fans, shaped to shed lint, force air and lint over end windings and out. Grease reservoir permits years of operation without relubrication. Special ratings of the new motor are now being offered for "soft-start" textile applications. Standard ratings available later. Mfr: General Electric.

The Velocity of new machinery

Anon. *America's Textile Reporter 66,* 1, 37-43, 109-114 (November 20, 1952).

Article is a resume of the New England mills which have liquidated in recent years, and those which continue to prosper. The reason for the liquidation is thought to be the failure of the mills to modernize and keep up with the trends in new machinery.

Will Military buying methods find civilian fabric uses?

Anon. *America's Textile Reporter 66,* 59, 61, 63 (November 20, 1952).

Article describes a controversy over the question, "Are military fabric purchasing standards about to become the basis of a considerable amount of civilian buying?" One leading textile authority states that this possibility is very small since serviceability or wear, the most important military specification, is but one factor among many to consider when making civilian purchases.

Will textile industry follow cotton production west?

Craig Smith. *Textile Industries 116,* 108 (December, 1952).

See front section.

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Carboxymethylcellulose

Rodney N. Hader. *Ind. and Eng. Chem. 44,* 2803-2812 (1952).

A review of carboxymethylcellulose treats its chemistry, application methods of production and production figures.

Cellulose

Emil Heuser. *Tappi 35,* 481-89 (1952).

The present status of the chemistry of cellulose is reviewed.

Chelate ion exchange resins

Harry P. Gregor, Mark Taifer, Louis Citarel and Ernest I. Becker. *Ind. and Eng. Chem. 44,* 2834-39 (1952).

This paper describes the first of a new class of ion exchange resins, in which chelate groups are substituents in a highly cross-linked and therefore insoluble hydrocarbon matrix. A chelate group suitable for use in a resin must have the following properties: (1) be capable of resin formation or substitution in a resin matrix; (2) be sufficiently stable to withstand the polymerization or resinification reaction; and (3) be compact so as not to be hindered sterically by the dense resin matrix. The chelate monomers used in this investigation include o-amino-phenol, anthranilic acid, and N, N'-biscarboxymethylene-m-phenyl-enediamine (m-phenylene diglycine).

Deterioration resistant treatment

Arthur C. Danielson (U. S. Rubber Co.); U. S. P. 2,616,822 (November 4, 1952).

A method for improving the resistance of cellulose fibers to the deteriorating effect of heat aging comprises incorporating guanidine carbonate in the fiber.

Development of a sewability test for cotton fabrics

E. B. Frederick. *Textile Research Journal 22,* 687 (October, 1952).

The development of the seam efficiency test to measure the sewability of a fabric is described. It is shown that his test, which involves the establishment of a ratio between the strength of the original fabric and the strength of the seamed fabric, is more realistic, reproducible, and sensitive than the previous test, which rated a fabric for sewability on the basis of the number of fabric yarns cut per inch during the sewing operation.

Dyeing with sonic vibrations

H. Rath and H. Merk. *Melliand Textilber 33,* 211-16; 311-14 (1952); *in German, C. A. 46,* 10625 (1952).

The authors show with the aid of laboratory experiments that the rate of absorption, penetration, and leveling of dyes applied to cellulose fibers can be promoted by means of sonic waves. The same applies, although to a lesser extent, when wool, acetate fibers, and synthetics are dyed. In view of the fact that sound wave transmitters are not yet sufficiently developed, it is not yet possible to utilize the results of these laboratory experiments in practical dyeing.

Effect of high-energy cathode rays on cellulose

Jerome F. Saeman and Merrill A. Millett and Elliott J. Lawton. *Ind. and Eng. Chem. 44,* 2848-52 (1952).

Data is presented on the destruction of carbohydrate by the irradiation of wood, wood pulp, cotton linters, and glucose. The molecular weight of wood pulp and cotton linters was determined after irradiation at various levels. Changes in the crystalline organization of cellulose resulting from irradiation were studied by means of the technique of dilute acid hydrolysis. The effect of irradiation on the amount of sugar produced by subsequent batchwise hydrolysis of cellulose was determined.

Fabric of improved whiteness or color

Douglas J. Fry and John D. Kendall (Ilford Ltd.); U. S. P. 2,620,282 (December 2, 1952).

Fabrics are treated with a compound such as 3-methyl-3'-ethyl oxacyanine iodie, m.p. 301° C. (decomp.) which is colorless in ethyl alcoholic soln. to improve the whiteness or the color of the fabrics.

Heterogeneous hydrolytic degradation of cellulose

Kei Matsuzak and Hiroshi Sabue. *Bull. Chem. Soc., Japan 24,* 184-7 (September, 1951); *in English.*

Purified cotton and wood pulp were hydrolyzed in 3.5 N HC1 for 4-120 hrs. at 30°. The hydrolized products were nitrated with the mixture of H_3PO_4—HNO_3—P_2O_5 at 0° for 6 hours. Acetone solns. of the nitrates were fractionally precipitated with ligroin, and chain length distribution curves were plotted. These curves show no positive proof of the presence of the weak bonds which split 5000 times faster than the usual glucosidic bonds. These are well explained with the submicroscopic structure of cellulose.

High dispersive products of silicic acid for spinning mills and dressing establishments

K. Dithmar. *Melliand Textilber. 33,* 957-9 (1952); *in German.*

The silicic acid suspensions described by the author are distinguished by a high degree of dispersion. Due to their large surface they are especially well suited for a uniform distribution on textile of all kinds. The products in question have a regulating influence on the draft, irrespective of the spinning method employed, are good slideproof agents, give films and preparations of better adhesion to the base material and increase the rubber resistance which bears analogy to the action of the highly dispersive loadings of silicic acid in the rubber industries.

Mechanics of elastic performance of textile materials

M. M. Platt, W. G. Klein, and W. J. Hamburger. *Textile Research Journal 22,* 641 (October, 1952).

The relationship between fiber properties and yarn performance is expressed mathematically by a method involving a generalized extension of the work of Hamburger (2) and Philipp (7). The mathematical formulas representing the mechanical behavior of cordage yarns are shown to be useful by a comparison between theoretically calculated and experimentally obtained data.

Method of sizing polymer yarns

Elmer H. Rossin (Monsanto Chemical Co.); U. S. P. 2,616,867 (November, 1952).

A method of sizing water-insoluble synthetic linear polymer yarns comprises applying thereto a water solution of a chlorine salt of a copolymer consisting of the product of a vinyl aromatic compound and an ethylene, B dicarboxylic compound and drying the yarn.

Mixed carboxy and hydroxy lower alkyl cellulose

Eugene D. Klug (Hercules Powder Company); U. S. P. 2,618,632 (November 18, 1952).

Process for preparing a mixed carboxy and hydroxy lower alkyl cellulose ether comprises introducing into the cellulose the hydroxyalkyl group and then introducing the carboxyalkyl groups wherein the entire process is carried out in an organic solvent such as the 3- and 4-carbon aliphatic alcohols.

Pyrolysis and combustion of cellulose in the presence of inorganic salts

Kenzi Tamaru. *Bull. Chem. Soc. Japan 24,* 164-8 (1951); *in English.*

The effects of various inorganic salts on the thermal decomposition of cellulose were investigated and the combustion of the cellulose in the presence of these salts was measured. It is suggested that the major action of the fire-resisting compounds is to prohibit the yield of the organic vapor produced by the pyrolysis. The effect of the salts were classified and explained from two major factors: the yield of organic vapor and the lowering action of ignition temperature of the charcoal.

Relation between certain defects in dyed fabrics and mechanical damage in wet processing

D. M. Cates, K. S. Campbell, and Henry A. Rutherford. *Textile Research Journal 22, 629,* (October, 1952).

It has been shown that mechanical damage by abrasion on the surface of cotton, viscose, Fortisan, and acetate fibers results in an increase in the initial rate of dyeing at the damaged area. This produces an abraded area appearing darker than the undamaged background up to the point where the amount of dye actually absorbed is approximately the same in both areas.

Stripping of synthetic condensation resins

E. Schonpflug and H. Anschutz. *Melliand Textilber. 33,* 959-60 (1952); *in German.*

The stripping of creaseproof finishes is of practical significance, for instance, when fibrous materials to which such finishes have been applied are to be dyed or redyed. The author shows that it is possible to remove both carbamide resin and melamine resin practically completely, without tendering the fiber to any significant extent.

The mechanics of bent yarns

Stanley Backer. *Textile Research Journal 22,* 668 (October, 1952).

This paper analyzes the idealized geometry of a bent yarn. Expressions are derived for the calculation of local fiber tensile strain, average strain in the helix half loop, motion of the fibers during bending of the yarn, changes in local helix angles, and fiber curvatures at the bend. The relationships between the geometric quantities of a bent yarn are presented graphically in dimensionless parameters, and conversions to the usual textile terms are provided. Attention is given to the practical applications of this analytical approach to textile problems.

Treatment of cellulose prior to acetylation

C. J. Malm, K. T. Barkey, D. C. May and E. B. Lefferts. *Ind. and Eng. Chem. 44,* 2904-09 (1952).

The paper is a summary of an investigation of the factors controlling the activation and catalyst treatment steps in the acetylation of cellulose. The data indicates that high reactivity of cellulose toward acetylation is obtained when there is rapid and uniform sorption of the H_2SO_4 catalyst. The amt. of sorbed catalyst is not as important as the uniformity of its distribution in the cellulose.

Vapor sorption of cellulose

G. A. Richter, L. E. Herdle and W. E. Wahtera. *Ind. and Eng. Chem. 44,* 2883-93 (1952).

Sorptive power of cellulose is an important measure of its structural composition and its behavior on subsequent processing. Sorption of water is affiected more by changes in fiber at 95 to 100% relative humidity than at lower relative humidities. The sorption levels are shown to be dependent not only on chemical history, but also on conditions and extent of water removal before testing. Sorption of organic vapors at high relative humidities depends on the vapor in question and on the extent to which the fiber has been swollen at the time of exposure to the vapor. Both rate and volume of sorption of such vapors depend on the nature of the cellulose and neither necessarily parallels the sorption of water by that cellulose.

TEXTILE EDUCATION AND RESEARCH J

Accrediting, course changes major concerns of textile deans council

Anon. *America's Textile Reporter 66,* 30-32, 34 (November 20, 1952).

Today's textile school curriculum lacks in-

struction in one of the salient problems facing the textile industry—human relations. That was one of the shortcomings viewed and discussed at the recent meeting of the National Council of Textile School Deans at the Hotel Statler in Boston. Some of the highlight statements of the meeting were: (1) The textile industry has a pressing need for country-wide consumer understanding of its position and problems. (2) More young men with textile school training are needed to keep pace with the continued growth of the industry. (3) The textile schools appear willing to change their curricula in accordance with constructive guidance by the industry. (4) The creation of an accrediting agency for the textile institutions in the United States is desirable.

British plant development research conference

Anon. *Skinner's Silk & Rayon Record 26,* 1341-1342 (November, 1952).

See front section.

Color fixation, crease recovery studies presented in AATCC papers

Anon. *America's Textile Reporter 66,* 25, 27, 29 (November 20, 1952).

A paper, entitled "Variables Affecting Dye Fixation in Padding," given by the New York section of the AATCC at the convention at Boston, gives a new approach toward good color fixation on padded material. The technique consists of storing the rolls before drying and keeping them as warm as possible. It is felt that method could be applied to all cellulosic materials and possibly to acetate, besides the viscose rayon fabric which was used in the experiments.

Cotton, synthetic carding methods challenged by textile school research

Anon. *America's Textile Reporter 66,* 71, 73, 75 (November 20, 1952).

Article gives an account of the results obtained by several mills when they applied the recommendations for decreasing neps in carding promulgated by the School of Textiles, N. C. State College, Raleigh, N. C. Unsolicited reports from ten mills indicate an average increase in production of 54%. While not all reports received were favorable, it seems that a failure to apply the whole program might be blamed for a large amount of the trouble.

Du Pont Awaits green light for laboratory

America's Textile Reporter 66, 19 (November 13, 1952).

Preparation of the site for du Pont's new

$5,000,000 textile research laboratory will get underway at Wilmington, Delaware, sometime in December, but actual construction awaits approval of the National Production Authority. The new lab will provide facilities for fundamental research on various phases of textiles, and will contain 17 different rooms for studies of the application of textile fibers, including Orlon, Dacron, nylon, acetate and rayon, to a variety of textile uses.

Human elements of fabrics keynoted at 31st AATCC parley in Boston

Anon. *America's Textile Reporter 66,* 11-13 (November 13, 1952).

Article is a report on the 31st annual convention of the American Association of Textile Chemists and Colorists at the Hotel Statler in Boston, Mass., on Nov. 6-8. William H. Ruffin, President of Erwin Mills, Inc., told a large gathering that the first element of bringing to reality the desires of tomorrow is to improve and widen the range of utility factors in industry's products. Second, development of new products which will satisfy new end uses or supersede those which have previously been served by other products, and the third component of industry's education was listed as fashion creations where basic fabric qualities are supplemented by applications of design, form color and finish to produce fashion appeal.

Latest processing methods were thrashed out at Canadian seminar

Anon. *Textile World 102,* 108-110, 251-252, 254 (December, 1952).

About 450 technicians from all branches of the Canadian and American textile industry were present at the third biennial seminar sponsored by the Textile Technical Federation of Canada at Queens University, Kingston, Ont., to join in evaluation of new cost-cutting techniques. The following papers were presented. (1) "Loom-Finished-Fabric Techniques Need Exploring." by Fred Fortess and George C. Ward, Celanese Corp. of America. (2) "Pile Fabrics Can Be Knit on Most Knitting Machines," by James H. Blore, Provincial Institute of Textiles. (3) "Yarn Number and Density Affect Fabric Water Repellency," by G. H. Segall, Canadian Industries Lts. (4) "Use of Oxalic-Acid Pretreatment Before Chrome Dye Stripping of Wool," by Daniel Frishman, Harris Research Laboratories. (5) "Optical Yarn-Eveness Tester Measures Cross-Sectional Irregularities," by W. M. Palmer, Canadian Celanese Ltd.

Index to Authors

VOL. 10, NO. 1, JANUARY 1953

	Column No.		Column No.		Column No.		Column No.
Albrecht, G. F.	1141	Fry, D. J.	1165	MacHenry, Richard	1153	Rinne, John	1152
Alexander, P.	1133	Gammon, J. J.	1138	MacMillan, W. G.	1132	Ripley, T. M.	1143
Amick, C. A.	1158	Grebby, J. W.	1153	Malm, C. J.	1168	Robinson, E. B.	1136
Anschutz, H.	1167	Gregor, H. P.	1164	Mallard, R. G.	1152	Rogers, E. F.	1158
Ashton, E. H.	1152	Grimes, M. A.	1132	Mangum, Dent, Jr.	1139	Rossin, E. H.	1166
Backer, Stanley	1167	Gulledge, P. J.	1150	Mann, R. J.	1145	Royer, G. L.	1158
Banerjee, B. L.	1132	Haden, R. N.	1164	Marcellus, B.	1143	Rutherford, H. A.	1167
Barkey, K. T.	1168	Haggerty, Wm. T., Jr.	1155	Matsuzak, Kei	1165	Rutley, W. P.	1135
Becker, E. I.	1164	Hamburger, W. J.	1166	May, D. C.	1168	Sabue, Hiroshi	1165
Berner, R. G.	1145	Hannah, Margaret	1138	May, J. W.	1144	Saeman, J. F.	1165
Biedawski, Jozef	1145	Hansen, H.	1155	Melbane, John	1160	Saunders, E. F.	1140
Bud, W. F.	1140	Hanlon, J. J.	1156	Merk, H.	1165	Schafer, H.	1161
Bolinger, E. D.	1145	Hardacre, W.	1143	Meys, J. M.	1142	Schonpflug, E.	1167
Buder, Karl	1144	Harenslak, Arthur	1146	Millett, M. A.		Schremp, E. P.	1147
Campbell, K. S.	1167	Heizer, E. J.	1144	Milloway, W. T.	1159	Schweitzer, Walter	1142
Campbell, P. J.	1141	Herdle, L. E .	1168	Moisson, G. M.	1155	Scott, R. C.	1160
Cates, D. M.	1167	Heuser, Emil	1164	Montgomery, D. J.	1159	Segall, G. H.	1158
Citarel, Louis	1164	Hill, J. H.		Mulholland, D. E.	1157	Shearer, H. E.	1153
Clark, J. A.	1154	Howell, J. W.	1161	Mulsow, Robert	1146	Simpson, Jack	1136
Corley, J. R.	1136	Kayser, G. M. A.	1142	Newman, J. A.	1135	Smith, Craig	1164
Costner, J. C.	1136	Keene, L. E.	1138	O'Connor, T. F.	1159	Souther, R. H.	1156
Courtaulds, E. B.	1143	Kendall, J. D.	1165	Pswin, C .R.	1153	Sumner, J. E.	1141
Cravens, B. B.	1136	Kennedy, J. H.	1142	Parker, S. P.	1151	Taggart, R. J.	1144
Danielson, A. C.	1164	Kerr, T. J.	1157	Peterson, F. B.	1152	Taifer, Mark	1164
Defore, Harry	1136	Kinsella, Edward	1145	Platt, M. M.	1166	Tamaru, Kenzi	1167
Dijk, P. V.	1142	Klein, W. G.	1166	Potter, C. A.	1135	Taylor, W. I.	1153
Dithmar, K.	1166	Klug, E. D.	1167	Powell, C. P.	1138	Wahtera, W. A.	1168
Dixon, J. K.	1157	Kreft, Ewald	1150	Powers, F. G.	1143	Ward, G. C.	1155
Drysdale, Donald	1140	Kulcycki, Karol	1148	Pressley, R. B.	1149	Waston, T. E.	
Duesberg, H. G.	1135	Lake, F. G.	1152	Ragan, Ralph	1141	Whitby, E. L.	1143
Ellis, C. P.	1143	Lathrop, R. P.	1142	Ramaswamy, M.	1132	Wildbolz, Rudolf	1142
Fleischer, S. S. C.	1147	Lawton, E. J.	1165	Rassmussen, I. M.	1158		
Focke, Hans	1148	Lefferts, E. B.	1168	Rath, H.	1165		
Frederick, E. B.	1165	Losie, G. L.	1154	Richter, G. A.	1168		

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